E/ECE/324
E/ECE/TRANS/505 } Rev.1/Add.36/Rev.2/Amend.4

11 August 1998

AGREEMENT

CONCERNING THE ADOPTION OF UNIFORM TECHNICAL PRESCRIPTIONS FOR WHEELED VEHICLES, EQUIPMENT AND PARTS WHICH CAN BE FITTED AND/OR BE USED ON WHEELED VEHICLES AND THE CONDITIONS FOR RECIPROCAL RECOGNITION OF APPROVALS GRANTED ON THE BASIS OF THESE PRESCRIPTIONS */

(Revision 2, including the amendments entered into force on 16 October 1995)

Addendum 36: Regulation No. 37

Revision 2 - Amendment 4

Supplement 15 to the 03 series of amendments - Date of entry into force: 14 May 1998

UNIFORM PROVISIONS CONCERNING THE APPROVAL OF FILAMENT LAMPS FOR USE IN APPROVED LAMP UNITS OF POWER-DRIVEN VEHICLES AND OF THEIR TRAILERS

UNITED NATIONS

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*/ Former title of the Agreement:

Agreement Concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts, done at Geneva on 20 March 1958.

GE.98- 22773

List of contents, annexes, annex 1,

Add at the end of the list new sheets, to read:

"....
Sheets HIR2
Sheets H9
Sheets H10"

Paragraph 2.4.3.1., footnote 4/, amend to read:

"4/ ..... 30 (vacant), 31 for Bosnia and Herzegovina, 32-36 (vacant), 37 for Turkey, 38-39 (vacant) and 40 for The former Yugoslav Republic of Macedonia. Subsequent numbers ..... to the Agreement Concerning the Adoption of Uniform Technical Prescriptions for Wheeled Vehicles, Equipment and Parts which can be Fitted and/or be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of these Prescriptions, ..."

Annex 1,

Data sheets HB3/1 to HB3/4 (former), replace by the new data sheets HB3/1 to HB3/4;

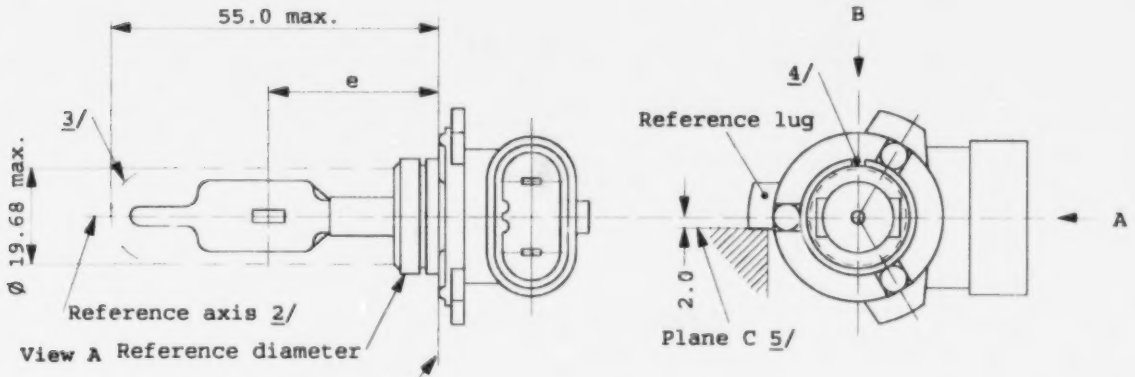
Data sheets HB4/1 to HB4/4 (former), replace by the new data sheets HB4/1 to HB4/4;

Add at the end new data sheets HIR2/1 to HIR2/3, H9/1 to H9/4 and H10/1 to H10/3, to read as follows:

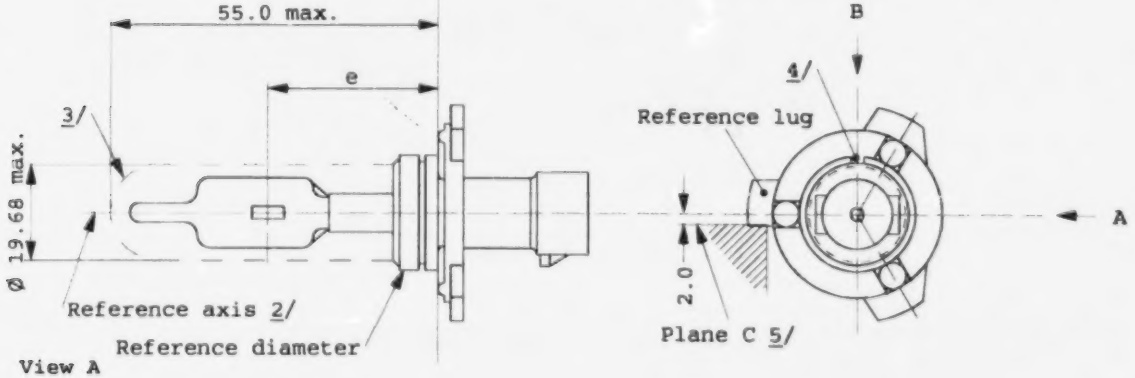
CATEGORIES HB3 AND HB3A Sheet HB3/1

The drawings are only to illustrate the essential dimensions of the filament lamp

Category HB3



Category HB3A



1/ The reference plane is the plane defined by the meeting points of the cap-holder fit.

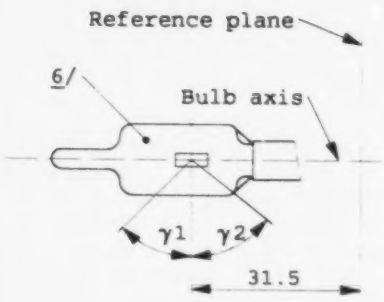
2/ The reference axis is perpendicular to the reference plane and concentric with the reference diameter of the cap.

3/ Glass bulb and supports shall not exceed the envelope and shall not interfere with insertion past the lamp key. The envelope is concentric to the reference axis.

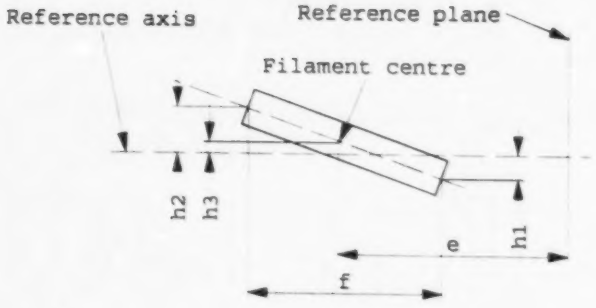
4/ The keyway is mandatory.

5/ The filament lamp shall be rotated in the measuring holder until the reference lug contacts plane C of the holder.

CATEGORIES HB3 AND HB3A Sheet HB3/2



Distortion free area 7/



Filament position and dimensions

6/ The bulb shall be colourless or yellow.

7/ Glass bulb periphery shall be optically distortion-free axially within the angles $\gamma 1$ and $\gamma 2$. This requirement applies to the whole bulb circumference within the angles $\gamma 1$ and $\gamma 2$.

CATEGORIES HB3 AND HB3A Sheet HB3/3

Dimensions in mm 12/		Tolerances	
		Filament lamps of normal production	Standard filament lamp
e 9/ 11/	31.5	10/	± 0.16
f 9/ 11/	5.1	10/	± 0.16
h1, h2	0	10/	± 0.15 8/
h3	0	10/	± 0.08 8/
γ_1	45° min.	-	-
γ_2	52° min.	-	-
Cap P 20d in accordance with IEC 61 (sheet 7004-31-2) 13/			
ELECTRICAL AND PHOTOMETRIC CHARACTERISTICS			
Rated values	Volts	12	12
	Watts	60	60
Test voltage	Volts	13.2	13.2
Objective values	Watts	73 max.	73 max.
	Luminous flux lm	1860	
	± %	12	
Reference luminous flux for headlamp testing: 1300 lm at approx. 12V			

8/ The eccentricity is measured only in viewing directions */ A and B as shown in the figure on sheet HB3/1. The points to be measured are those where the projection of the outside of the end turns nearest to or furthest from the reference plane crosses the filament axis.

9/ The viewing direction is direction */ B as shown in the figure on sheet HB3/1.

10/ To be checked by means of a "box-system". Sheet HB3/4. */

11/ The ends of the filament are defined as the points where, when the viewing direction */ as defined in note 9/ above, the projection of the outside of the end turns crosses the filament axis.

12/ Dimensions shall be checked with O-ring removed.

13/ Filament lamp HB3 shall be equipped with the right-angle cap and filament lamp HB3A with the straight cap

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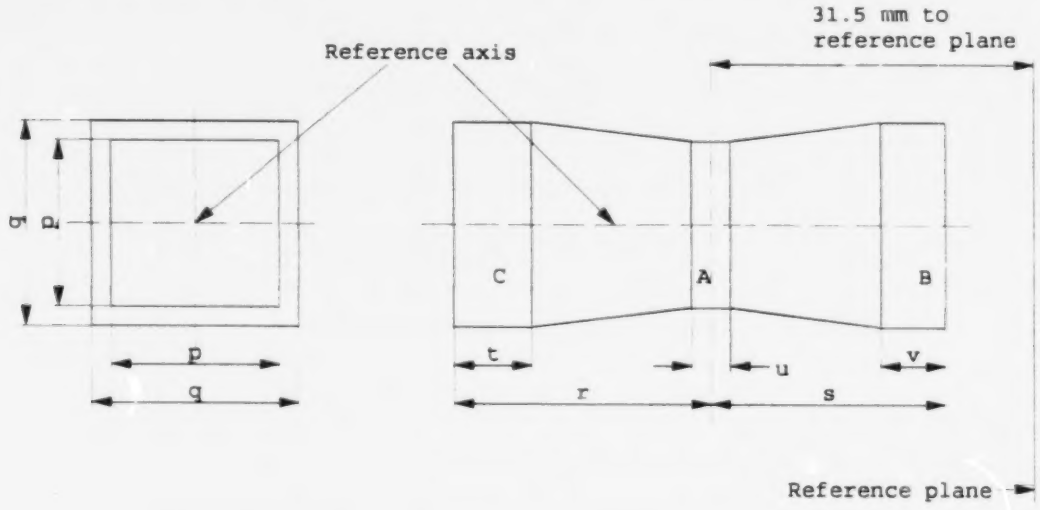
*/ Manufacturers may choose another set of perpendicular viewing directions. The viewing directions specified by the manufacturer are to be used by the testing laboratory when checking filament dimensions and position.

CATEGORIES HB3 AND HB3A Sheet HB3/4

Screen projection requirements

This test is used to determine, by checking whether the filament is correctly positioned relative to the reference axis and the reference plane, whether a lamp complies with the requirements.



	p	q	r	s	t	u	v
12 V	1.3 d	1.6 d	3.0	2.9	0.9	0.4	0.7

d = diameter of filament

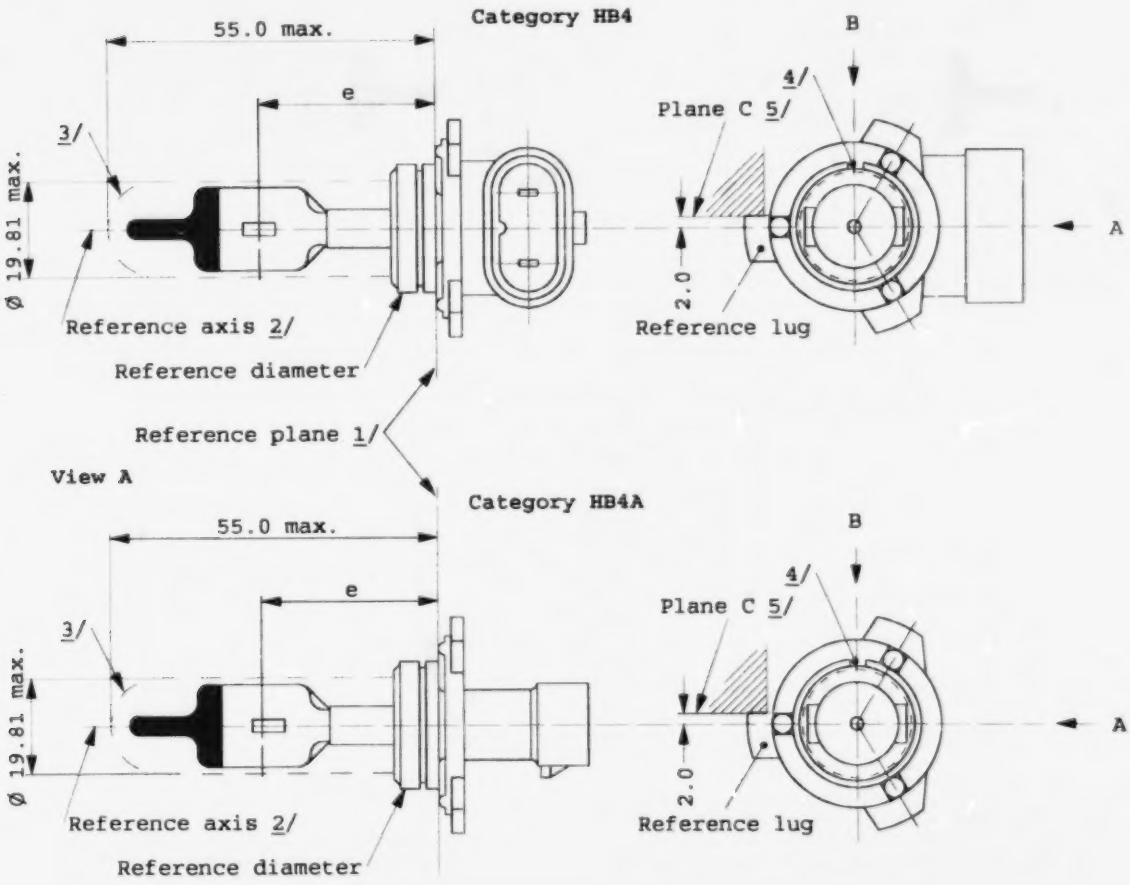
The filament position is checked solely in directions A and B as shown on sheet HB3/1.

The beginning of the filament as defined on sheet HB3/3, note 11/ shall be in volume "B" and the end of the filament in volume "C".

The filament shall lie entirely within the limits shown.
Volume "A" does not involve any filament centre requirement.

CATEGORIES HB4 AND HB4A Sheet HB4/1

The drawings are only to illustrate the essential dimensions of the filament lamp



View A

1/ The reference plane is the plane defined by the meeting points of the cap-holder fit.

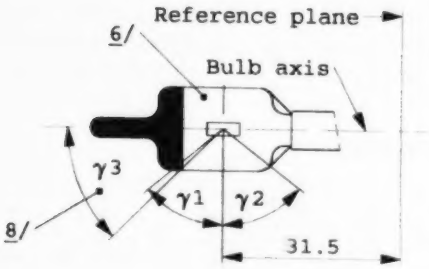
2/ The reference axis is perpendicular to the reference plane and concentric with the reference diameter of the cap.

3/ Glass bulb and supports shall not exceed the envelope and shall not interfere with insertion past the lamp key. The envelope is concentric to the reference axis.

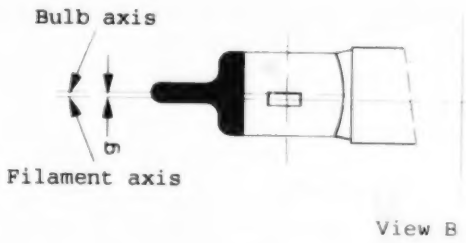
4/ The keyway is mandatory.

5/ The filament lamp shall be rotated in the measuring holder until the reference lug contacts plane C of the holder.

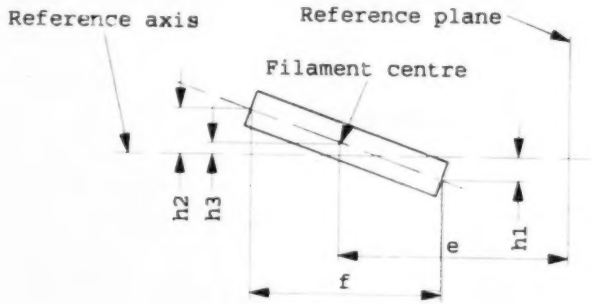
CATEGORIES HB4 AND HB4A Sheet HB4/2



Distortion free area 7/ and black top 8/



Bulb eccentricity



Bulb position and dimensions

6/ The bulb shall be colourless or yellow.

7/ Glass bulb periphery shall be optically distortion-free axially within the angles $\gamma 1$ and $\gamma 2$. This requirement applies to the whole bulb circumference within the angles $\gamma 1$ and $\gamma 2$.

8/ The obscuration shall extend to at least angle $\gamma 3$ and shall be at least as far as the undistorted part of the bulb defined by angle $\gamma 1$.

CATEGORIES HB4 AND HB4A Sheet HB4/3

Dimensions in mm 13/		Tolerances	
		Filament lamps of normal production	Standard filament lamp
e 10/ 12/	31.5	11/	± 0.16
f 10/ 12/	5.1	11/	± 0.16
h1, h2	0	11/	± 0.15 9/
h3	0	11/	± 0.08 9/
g 10/	0.75	± 0.5	± 0.3
γ_1	50° min.	-	-
γ_2	52° min.	-	-
γ_3	45°	± 5°	± 5°
Cap P 22d in accordance with IEC 61 (sheet 7004-32-2) 14/			
ELECTRICAL AND PHOTOMETRIC CHARACTERISTICS			
Rated values	Volts	12	12
	Watts	51	51
Test voltage	Volts	13.2	13.2
Objective values	Watts	62 max.	62 max.
	Luminous flux lm	1095	
	± %	15	
Reference luminous flux for headlamp testing: 825 lm at approx. 12V			

9/ The eccentricity is measured only in viewing directions */ A and B as shown in the figure on sheet HB4/1. The points to be measured are those where the projection of the outside of the end turns nearest to or furthest from the reference plane crosses the filament axis.

10/ The viewing direction is direction */ B as shown in the figure on sheet HB4/1.

11/ To be checked by means of a "box-system". Sheet HB4/4. */

12/ The ends of the filament are defined as the points where, when the viewing direction */ as defined in note 10/ above, the projection of the outside of the end turns crosses the filament axis.

13/ Dimensions shall be checked with O-ring removed.

14/ Filament lamp HB4 shall be equipped with the right-angle cap and filament lamp HB4A with the straight cap.

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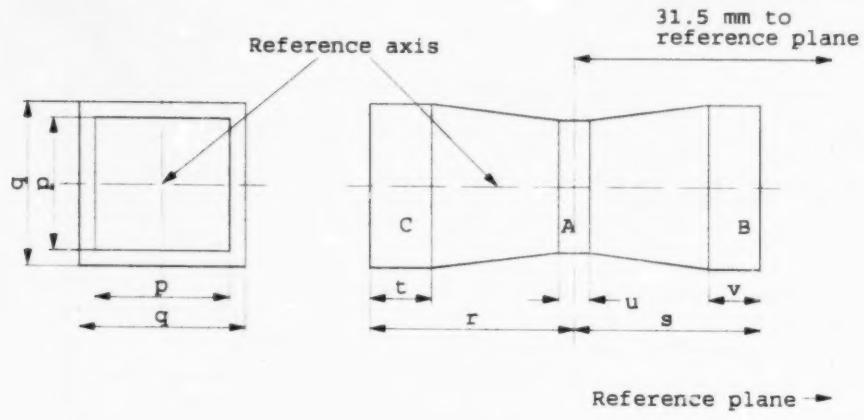
*/ Manufacturers may choose another set of perpendicular viewing directions. The viewing directions specified by the manufacturer are to be used by the testing laboratory when checking filament dimensions and position.

CATEGORIES HB4 AND HB4A Sheet HB4/4

Screen projection requirements

This test is used to determine, by checking whether the filament is correctly positioned relative to the reference axis and the reference plane, whether a filament lamp complies with the requirements.



	p	q	r	s	t	u	v
12 V	1.3 d	1.6 d	3.0	2.9	0.9	0.4	0.7

d = diameter of filament

The filament position is checked solely in directions A and B as shown on sheet HB4/1.

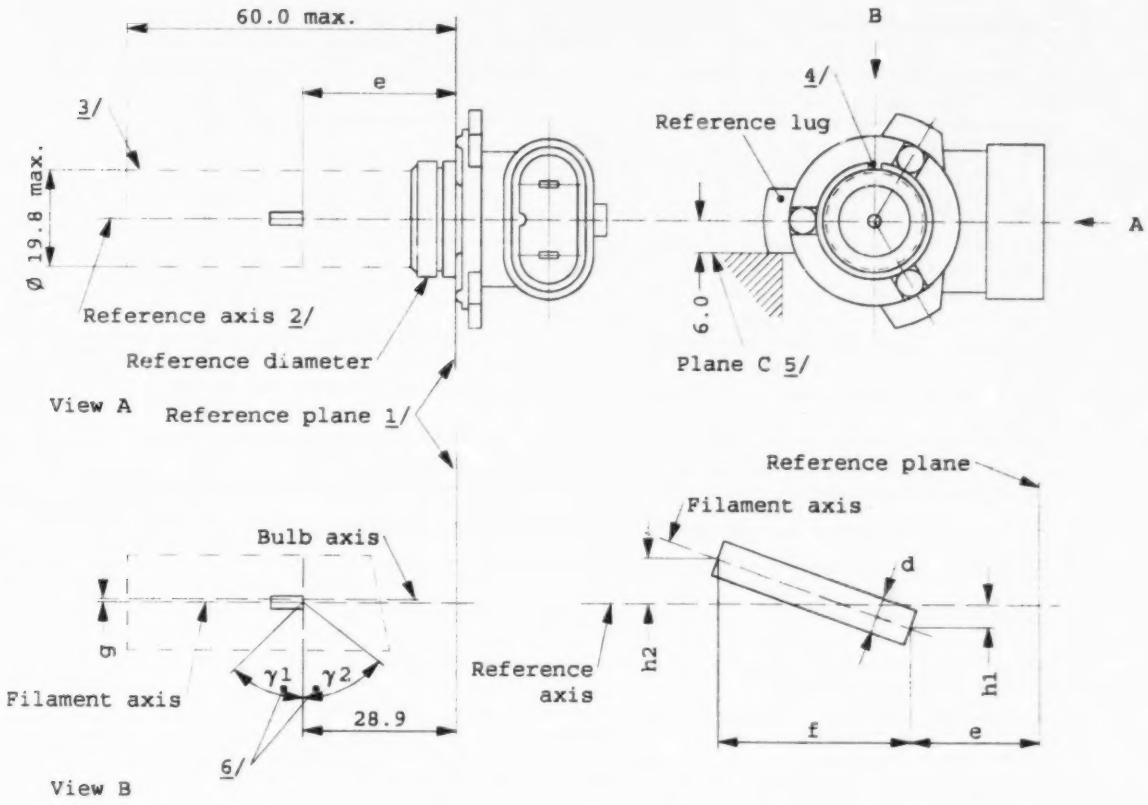
The beginning of the filament as defined on sheet HB4/3, note 12/ shall be in volume "B" and the end of the filament in volume "C".

The filament shall lie entirely within the limits shown. Volume "A" does not involve any filament centre requirement.

CATEGORY HIR2 Sheet HIR2/1

The drawings are only to illustrate the essential dimensions of the filament lamp

Dimensions in mm



1/ The reference plane is the plane defined by the three meeting points of the cap-holder fit.

2/ The reference axis is perpendicular to the reference plane and passes through the center of the reference diameter of the cap.

3/ Glass bulb and supports shall not exceed the envelope. The envelope is concentric to the reference axis.

4/ The keyway is mandatory.

5/ The filament lamp shall be rotated in the measuring holder until the reference lug contacts plane C of the holder.

6/ Glass bulb periphery shall be optically distortion-free axially within the angles $\gamma 1$ and $\gamma 2$. This requirement applies to the whole bulb circumference within the angles $\gamma 1$ and $\gamma 2$.

CATEGORY HIR2 Sheet HIR2/2

Dimensions in mm 11/		Tolerances	
		Filament lamps of normal production	Standard filament lamp
e 8/ 10/	28.9	9/	± 0.16
f 8/ 10/	5.3	9/	± 0.16
g 8/	0	+ 0.7 - 0.0	+ 0.4 - 0.0
h1, h2	0	9/	± 0.15 7/
d	1.6 max	-	-
γ_1	50° min.	-	-
γ_2	50° min.	-	-
Cap PX 22d in accordance with IEC Publ. 61 (sheet 7004-..-..)			
ELECTRICAL AND PHOTOMETRIC CHARACTERISTICS			
Rated values	Volts	12	12
	Watts	55	55
Test voltage	Volts	13.2	13.2
Objective values	Watts	63 max.	63 max.
	Luminous flux lm	1875	
	± %	15	
Reference luminous flux for headlamp testing: 1355 lm at approx. 12V			

7/ The eccentricity is measured only in viewing directions A and B as shown in the figure on sheet HIR2/1. The points to be measured are those where the projection of the outside of the end turns nearest to or furthest from the reference plane crosses the filament axis.

8/ The viewing direction is direction B as shown in the figure on sheet HIR2/1.

9/ To be checked by means of a "box-system". Sheet HIR2/3.

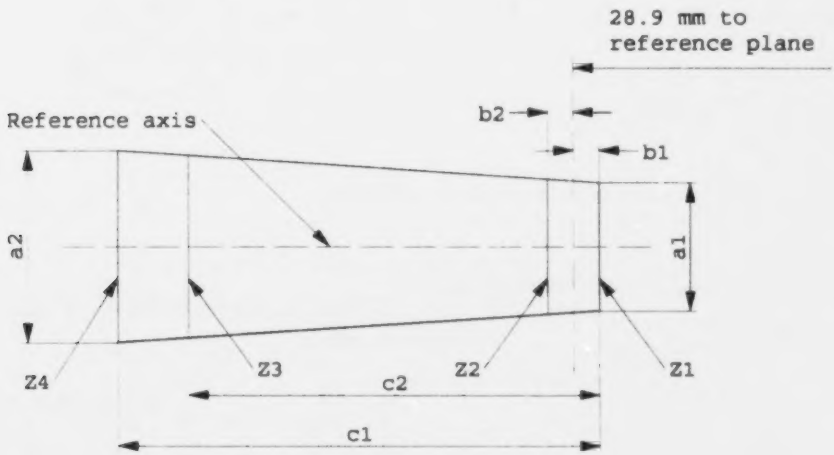
10/ The ends of the filament are defined as the points where, when the viewing direction as defined in note 8/ above, the projection of the outside of the end turns crosses the filament axis.

11/ Dimensions shall be checked with O-ring removed.

CATEGORY HIR2 Sheet HIR2/3

Screen projection requirements

This test is used to determine, by checking whether the filament is correctly positioned relative to the reference axis and the reference plane, whether a lamp complies with the requirements.



	a1	a2	b1	b2	c1	c2
12 V	d + 0.4	d + 0.8	0.35		6.6	5.7

d = diameter of filament

The filament position is checked solely in directions A and B as shown on sheet HIR2/1.

The beginning of the filament as defined on sheet HIR2/2, note 10/ shall lie between lines Z1 and Z2 and between lines Z3 and Z4."

CATEGORY H9 Sheet H9/1

The drawings are intended only to illustrate the essential dimensions of the filament lamp.

Dimensions in millimetres

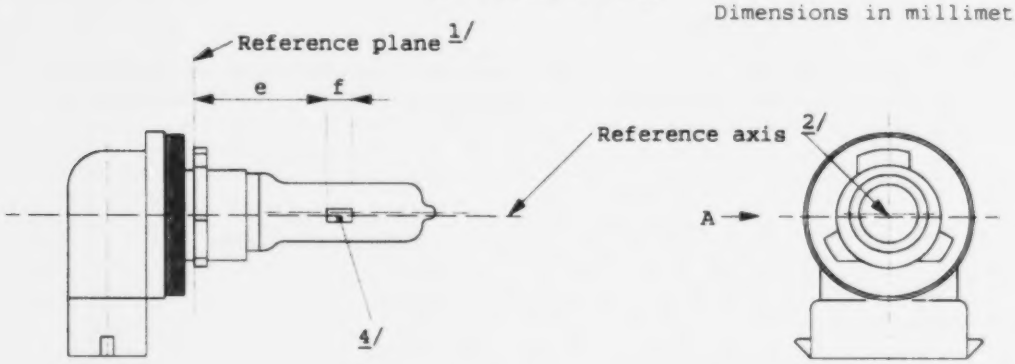


Figure 1 - Main drawing

B

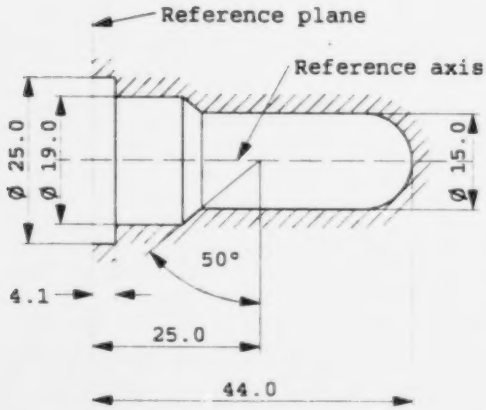


Figure 2 - Maximum lamp outline 3/

1/ The reference plane is the plane formed by the underside of the beveled lead-in flange of the cap.

2/ The reference axis is perpendicular to the reference plane and passing through the centre of the 19 mm cap diameter.

3/ Glass bulb and supports shall not exceed the envelope as indicated in figure 2. The envelope is concentric to the reference axis.

4/ Notes concerning the filament diameter.
- No actual diameter restrictions apply but the objective for future developments is to have d max. = 1.4 mm
- For the same manufacturer, the design diameter of standard (étalon) filament lamp and filament lamp of normal production shall be the same.

CATEGORY H9 Sheet H9/2

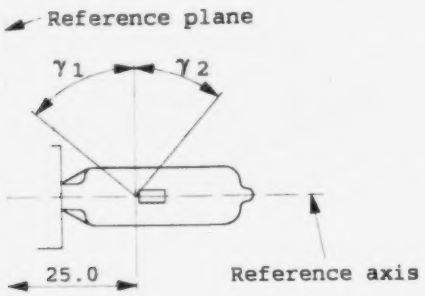


Figure 3 - Distortion free area 5/

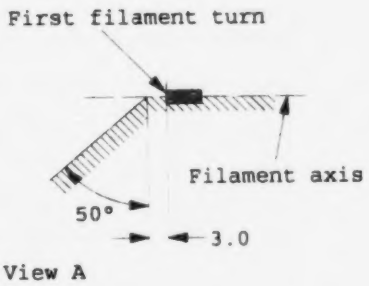


Figure 4 - Metal free zone 6/

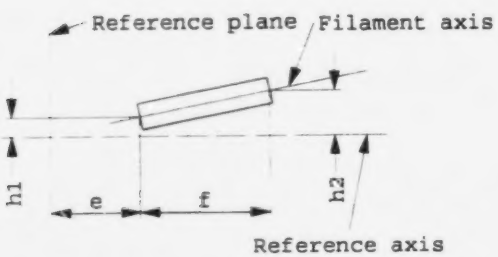


Figure 5 - Offset of filament axis 7/
(for standard filament lamps only)

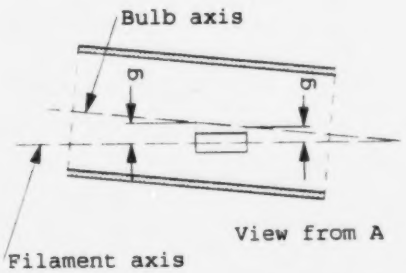


Figure 6 - Bulb eccentricity 8/

5/ Glass bulb shall be optically distortion free within the angles γ_1 and γ_2. This requirement applies to the whole bulb circumference within the angles γ_1 and γ_2

6/ The internal design of the lamp shall be such that stray light images and reflections are only located above the filament itself seen from the horizontal direction. (View A as indicated in figure 1, sheet H9/1).
No metal parts other than filament turns shall be located in the shaded area as seen in figure 4.

7/ The offset of the filament with respect to the reference axis is measured only in viewing directions A and B as shown in figure 1 on sheet H9/1. The points to be measured are those where the projection of the outside of the end turns nearest to or furthest from the reference plane crosses the filament axis.

8/ Offset of bulb with respect to filament axis measured in two planes parallel to the reference plane where the projection of the outside of the end turns nearest to or furthest from the reference plane crosses the filament axis.

CATEGORY H9 Sheet H9/3

Dimensions in mm		Tolerances	
		Filament lamps of normal production	Standard filament lamp
e 9/ 10/	25	11/	± 0.10
f 9/ 10/	4.8	11/	± 0.10
g 9/	0.70	± 0.5	± 0.30
h1	0	11/	± 0.10 12/
h2	0	12/	± 0.15 12/
γ_1	50° min.	-	-
γ_2	40° min.	-	-
Cap PGJ19-5 in accordance with IEC 61 (sheet 7004-110-1)			
ELECTRICAL AND PHOTOMETRIC CHARACTERISTICS			
Rated values	Volts	12	12
	Watts	65	65
Test voltage	Volts	13.2	13.2
Objective values	Watts	73 max.	73 max.
	Luminous flux lm	2100	
	± %	10	
Reference luminous flux for headlamp testing: 1500 lm at approx. 12V			

9/ The viewing direction is direction A as shown in figure 1 on sheet H9/1.

10/ The ends of the filament are defined as the points where, when the viewing direction as defined in note 9/ above, the projection of the outside of the end turns crosses the filament axis.

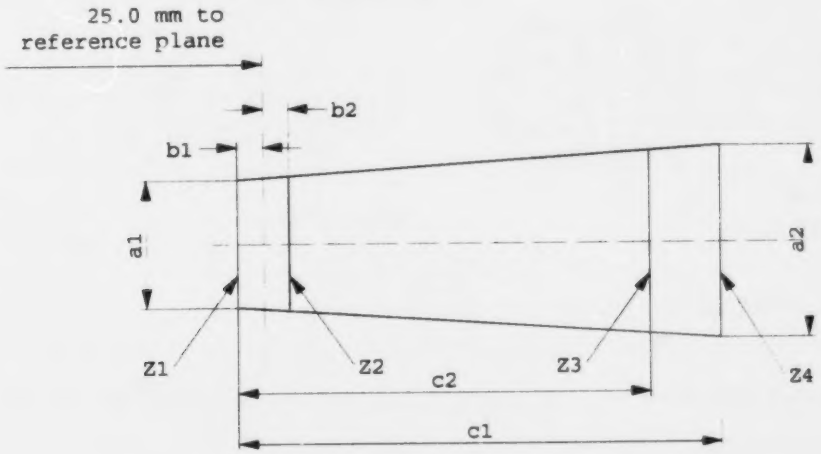
11/ To be checked by means of a "box-system". Sheet H9/4.

12/ The eccentricity is measured only in viewing directions A and B as shown in figure 1 on sheet H9/1. The points to be measured are those where the projection of the outside of the end turns nearest to or furthest from the reference plane crosses the filament axis.

CATEGORY H9 Sheet H9/4

Screen projection requirements

This test is used to determine, by checking whether the filament is correctly positioned relative to the reference axis and the reference plane, whether a lamp complies with the requirements.



	a1	a2	b1	b2	c1	c2
12 V	d + 0.4	d + 0.7	0.25		5.7	4.6

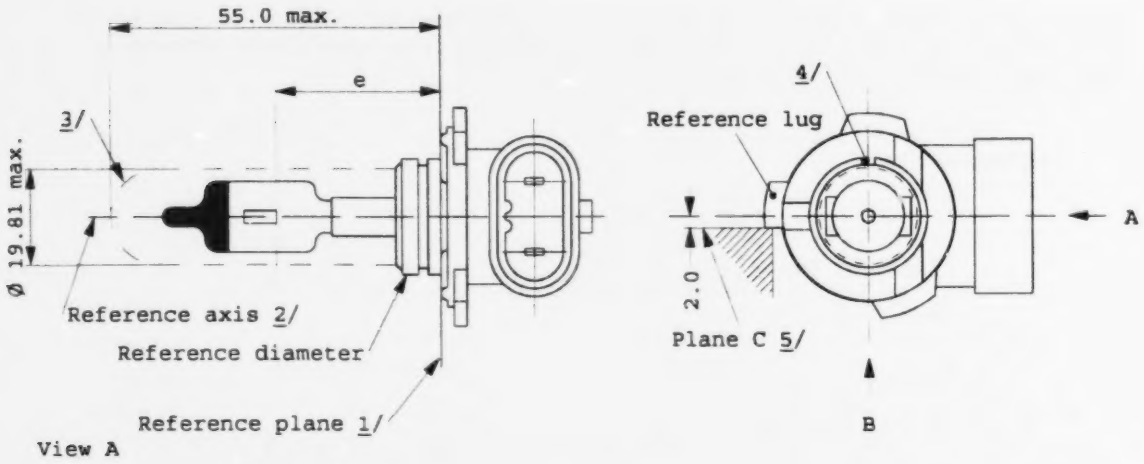
d = diameter of filament

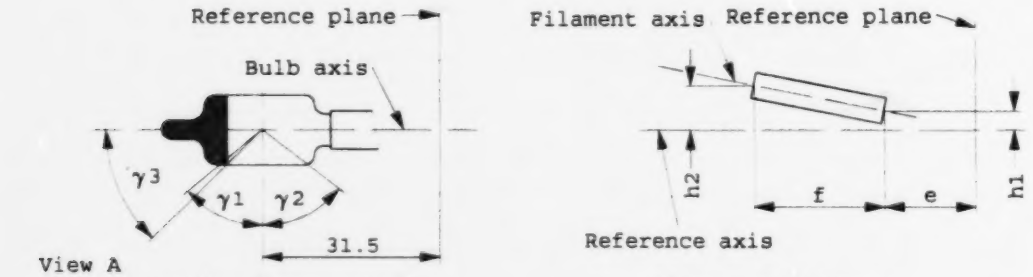
The filament position is checked solely in directions A and B as shown on sheet H9/1.

The ends of the filament as defined on sheet H9/3, note 10/ shall lie between lines Z1 and Z2 and between lines Z3 and Z4.

CATEGORY H10 Sheet H10/1

The drawings are only to illustrate the essential dimensions of the filament lamp





1/ The reference plane is the plane defined by the meeting points of the cap-holder fit.

2/ The reference axis is perpendicular to the reference plane and concentric with the reference diameter of the cap.

3/ Glass bulb and supports shall not exceed the envelope and shall not interfere with insertion past the lamp key. The envelope is concentric to the reference axis.

4/ The keyway is mandatory.

5/ The filament lamp shall be rotated in the measuring holder until the reference lug contacts plane C of the holder.

6/ Glass bulb periphery shall be optically distortion-free axially within the angles $\gamma 1$ and $\gamma 2$. This requirement applies to the whole bulb circumference within the angles $\gamma 1$ and $\gamma 2$.

7/ The obscuration shall extend to at least angle $\gamma 3$ and shall be at least as far as the undistorted part of the bulb defined by angle $\gamma 1$.

CATEGORY H10 Sheet H10/2

Dimensions in mm 8/		Tolerances	
		Filament lamps of normal production	Standard filament lamp
e 9/ 10/	28.9	11/	± 0.16
f 9/ 10/	5.2	11/	± 0.16
h1, h2	0	11/	± 0.15 12/
γ_1	50° min.		
γ_2	52° min.		
γ_3	45°	± 5°	± 5°
Cap PY20d in accordance with IEC 61 (sheet 7004-...-...)			
ELECTRICAL AND PHOTOMETRIC CHARACTERISTICS			
Rated values	Volts	12	12
	Watts	42	42
Test voltage	Volts	13.2	13.2
Objective values	Watts	50 max.	50 max.
	Luminous flux lm ± %	850	
		15	
Reference luminous flux: 600 lm at approx. 12V			

8/ Dimensions shall be checked with O-ring removed.

9/ The viewing direction is direction */ B as shown in the figure on sheet H10/1.

10/ The ends of the filament are defined as the points where, when the viewing direction */ as defined in note 9/ above, the projection of the outside of the end turns crosses the filament axis.

11/ To be checked by means of a "box-system". Sheet H10/3. */

12/ The eccentricity is measured only in viewing directions */ A and B as shown in the figure on sheet H10/1. The points to be measured are those where the projection of the outside of the end turns nearest to or furthest from the reference plane crosses the filament axis.

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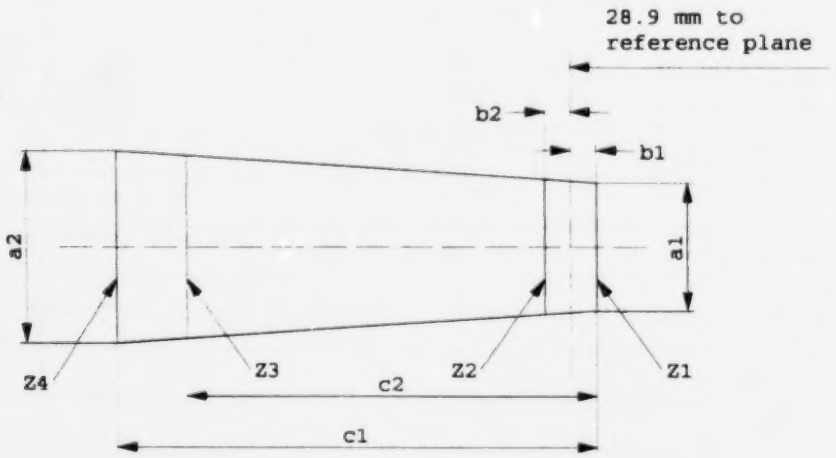
*/ Manufacturers may choose another set of perpendicular viewing directions. The viewing directions specified by the manufacturer are to be used by the testing laboratory when checking filament dimensions and position.

CATEGORY H10 Sheet H10/3

Screen projection requirements

This test is used to determine, by checking whether the filament is correctly positioned relative to the reference axis and the reference plane, whether a filament lamp complies with the requirements.



	a1	a2	b1	b2	c1	c2
12 V	1.4 d	1.8 d	0.25		6.1	4.9

d = diameter of filament

The filament position is checked solely in directions A and B as shown on sheet H10/1.

The ends of the filament as defined on sheet H10/2, note 10/ shall lie between lines Z1 and Z2 and between lines Z3 and Z4.